

Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985). The 700 $\mu\text{mhos/cm}$ agricultural water quality goal is intended to prevent reduction in crop yield, i.e. a restriction on use of water, for salt-sensitive crops, such as beans, carrots, turnips, and strawberries. Most other crops can tolerate higher EC concentrations without harm, however, as the salinity of the irrigation water increases, more crops are potentially harmed by the EC, or extra measures must be taken by the farmer to minimize or eliminate any harmful impacts.

EC concentrations in the effluent samples collected from January 2002 through December 2002, averaged 545 $\mu\text{mhos/cm}$, with a minimum effluent level of 442 $\mu\text{mhos/cm}$, and a maximum effluent level of 624 $\mu\text{mhos/cm}$, based on the results of eleven samples. The background receiving water EC averaged 378 $\mu\text{mhos/cm}$ from 12 sampling events collected by the Discharger from January 2002 through December 2002. Based on this data, the discharge does not have a reasonable potential to cause or contribute to an exceedance of the applicable water quality objectives for EC.

- iii. **Sulfate.** The secondary MCL for sulfate is 250 mg/L as recommended level, 500 mg/L as an upper level, and 600 mg/L as a short-term maximum. Sulfate concentrations in the effluent ranged from 5.1 mg/L to 32.8 mg/L, with an average of 24 mg/L, for 12 samples collected by the Discharger from January 2002 through December 2002. Background concentrations in receiving water ranged from 19.2 mg/L to 36.4 mg/L, with an average of 26 mg/L, for 12 samples collected by the Discharger from January 2002 through December 2002. The effluent does not exceed the secondary MCL recommended level of 250 mg/L. Based on this data, the discharge does not have a reasonable potential to cause or contribute to an exceedance of the applicable water quality objectives for Sulfate.
- iv. **Total Dissolved Solids (TDS).** The secondary MCL for TDS is 500 mg/L as a recommended level, 1000 mg/L as an upper level, and 1500 mg/L as a short-term maximum. The recommended agricultural water quality goal for TDS, that would apply the narrative chemical constituent objective, is 450 mg/L as a long-term average based on Water Quality for Agriculture, Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985). Water Quality for Agriculture evaluates the impacts of salinity levels on crop tolerance and yield reduction, and establishes water quality goals that are protective of the agricultural uses. The 450 mg/L water quality goal is intended to prevent reduction in crop yield, i.e. a restriction on use of water, for salt-sensitive crops. Only the most salt sensitive crops require irrigation water of 450 mg/L or less to prevent loss of yield. Most other crops can tolerate higher TDS concentrations without harm, however, as the salinity of the irrigation water increases, more crops are potentially harmed by the TDS, or extra measures must be taken by the farmer to minimize or eliminate any harmful impacts.

A review of the Discharger's monitoring reports for the samples collected from January 2002 through December 2002, indicates an average TDS effluent concentration of 275 mg/l, a minimum effluent concentration of 244 mg/l, and a maximum effluent concentration of 308 mg/l (based on 11 data points). The background receiving water TDS averaged 195 mg/L from 12 sampling events performed by the Discharger from January 2002 through December 2002. Based on this data, the discharge does not have a reasonable potential to cause or contribute to an exceedance of the applicable water quality objectives for TDS.

- v. **Salinity Effluent Limitations.** Based on the low reported salinity in the effluent, the discharge does not have reasonable potential to cause or contribute to an in-stream excursion of water quality objectives for salinity. However, since the receiving water is tributary to the Sacramento-San Joaquin Delta, of additional concern is the salt contribution to Delta waters. Therefore, this Order requires the Discharger to develop a salinity evaluation and minimization plan to address sources of salinity from the domestic wastewater treatment system.
- r. **Settleable Solids.** For inland surface waters, the Basin Plan states that "[w]ater shall not contain substances in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses." The previous Order contained average monthly and maximum daily effluent limitations for settleable solids of 0.1 ml/L and 0.2 ml/L, respectively, to ensure compliance with this Basin Plan narrative objective. Based on 431 samples from April 2003 – February 2007, the effluent settleable solids was never detected. All samples were <0.1 ml/L. Therefore, the discharge does not have a reasonable potential to cause or contribute to an exceedance of the Basin Plan's narrative objective for deposition of material, and the effluent limitations for settleable solids have not been carried forward. Removal of the settleable solids effluent limitation is in compliance with federal anti-backsliding requirements of the CWA and Federal regulations, the antidegradation provisions of CFR Part 131.12, and State Water Resources Control Board Resolution 68-16. Any impact on existing water quality will be insignificant.
- s. **Toxicity.** See Section IV.C.5. of the Fact Sheet regarding whole effluent toxicity.
- t. **Zinc.** The CTR includes hardness-dependent criteria for the protection of freshwater aquatic life for zinc. The criteria for zinc are presented in dissolved concentrations. USEPA recommends conversion factors to translate dissolved concentrations to total concentrations. The conversion factors for zinc in freshwater are 0.978 for the acute criteria and 0.986 for the chronic criteria. Using the reasonable worst-case effluent hardness, (70 mg/L as CaCO₃), the applicable chronic criterion (maximum four-day average concentration) and the applicable acute criterion (maximum one-hour average concentration) are both 87 µg/L as total recoverable.

The MEC for total zinc was 149 µg/L, based on 12 samples collected between January 2002 through December 2002, while the maximum observed upstream receiving water total zinc concentration was 14 µg/L, based on 12 samples collected during the same period. Therefore, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for zinc. An AMEL and MDEL for total zinc of 38 µg/L and 89 µg/L, respectively, are included in this Order based on CTR criteria for the protection of freshwater aquatic life (See Attachment F, Table F-8 for WQBEL calculations).

Based on reported effluent data, the Discharger will be unable to comply with these new limitations. Section 2.1 of the SIP allows for compliance schedules within the permit for existing discharges where it is demonstrated that it is infeasible for a Discharger to achieve immediate compliance with a CTR criterion. Using the statistical methods for calculating interim effluent limitations described in Attachment F, Section IV.E, an interim performance-based maximum daily limitation of 172.2 µg/L was calculated.

Section 2.1 of the SIP provides that: *"Based on an existing discharger's request and demonstration that it is infeasible for the discharger to achieve immediate compliance with a CTR criterion, or with an effluent limitation based on a CTR criterion, the RWQCB may establish a compliance schedule in an NPDES permit."* Section 2.1, further states that compliance schedules may be included in NPDES permits provided that the following justification has been submitted: *...(a) documentation that diligent efforts have been made to quantify pollutant levels in the discharge and the sources of the pollutant in the waste stream; (b) documentation of source control measures and/or pollution minimization measures efforts currently underway or completed; (c) a proposal for additional or future source control measures, pollutant minimization actions, or waste treatment (i.e., facility upgrades); and (d) a demonstration that the proposed schedule is as short as practicable."* This compliance schedule is contingent upon the Discharger submitting a compliance schedule justification for zinc **by the effective date of this Order**. The compliance schedule justification shall include all items specified in Paragraph 3, items (a) through (d), of section 2.1 of the SIP. Provided the Discharger submits a compliance schedule justification for zinc the new WQBELs for *zinc* become effective on **18 May 2010**.

This Order requires the Discharger to submit a corrective action plan and implementation schedule to assure compliance with the final *zinc* effluent limitations. The interim effluent limitations are in effect through **17 May 2010**. As part of the compliance schedule for *zinc*, the Discharger shall develop and implement a pollution prevention plan in compliance with CWC section 13263.3(d)(3).

Table F-5. RPA for Effluent Constituents with Detectable Results

Parameter (units)	N ²	Cv ²	MEC ^{2,5}	B ^{2,5}	WQO/WQC ²	Source	RP ¹
Benzene	12	0.6	0.5	ND	1.0	Primary MCL	N
Bis(2-ethylhexyl)phthalate	4	0.6	11	9	1.8	National Toxics Rule	I
Chloroform (µg/L)	12	0.6	2.4	ND	80	USEPA Primary MCL	N
Aluminum (µg/L)	12	0.4	67	201	87/750	USEPA Ambient WQ Criteria	N ⁶
Ammonia (mg/L)	12	0.3	15.8	0.26	1.3 ³	USEPA Recommended WQ Criteria	Y
Chloride (mg/L)	12	0.6	74.2	12.4	106	Agri. goal	N
Arsenic (µg/L)	12	0.6	1.2	1.2	10	USEPA Primary MCL	N
Antimony (µg/L)	12	0.6	0.42	0.15	6	Primary MCL	N
Barium (µg/L)	12	0.6	8.5	47.9	1000	Calif Primary MCL	N
Berillium (µg/L)	12	0.6	ND	ND	4	Calif Primary MCL	N
Chromium Total (µg/L)	12	0.6	49	0.3	50	USEPA Primary MCL	N
Copper (µg/L)	12	0.3	16.4	5.6	6.9 ⁴	Calif. Toxic Rule	Y
Fluoride (µg/L)	12	0.6	0.1	0.14	1000	Agri. WQ Goal	I
Iron (µg/L)	12	0.7	359	308	300	Calif. Secondary MCL	N ⁶
Lead (µg/L)	12	0.6	0.8	0.4	2.0 ⁴	Calif Toxic Rule	N
Mercury (ng/l)	12	0.6	12.5	4.40	50	CTR Human Health	N
Manganese (µg/L)	12	0.6	122	36.2	50	Calif. Secondary MCL	Y
Nickel (µg/L)	12		34	2.0	39 ⁴	Calif. Toxic Rule	N
Silver (µg/L)	12	0.6	0.89	0.11	2.2 ⁴	Calif Toxic Rule	N
Zinc ((µg/L)	12	0.6	149	14	89 ⁴	Calif. Toxic Rule	Y
Toluene (µg/L)	12	0.6	1.2	ND	40	Secondary MCL	N
EC (µmhos/cm)	12	0.6	624	474	700 ⁷	Agri. WQ goal	N
Foaming Agents (MBAS) (µg/L)	11	0.6	410	110	500/500	Calif. Secondary MCL	I
Nitrate (mg/l)	12	0.6	6.85	0.59	10	Calif. Primary MCL	Y
Nitrite (mg/l)	12	0.6	2.34	ND	1.0	Calif. Prmiary MCL	Y
Sulfates (mg/l)	12	0.6	32.8	36.4	250	Calif. Secondary MCL	N
TDS (mg/L)	11	0.6	308	275	450 ⁷	Agri. WQ Goal	N

¹ Reasonable Potential? N: No, Y: Yes, I: Incomplete data

² n: number of data points available; cv: statistically determined coefficient of variation; RPA multiplier: 99th percentile multiplier; MEC: maximum effluent concentration except for hardness, which is recorded as highest/lowest; N.D. Not detected; B: background receiving water concentration; WQO/WQC: applicable water quality objective/water quality criteria.

³ The maximum 30-day receiving water temperature and pH of 17.2⁰C, and 8.04, respectively, were used to calculate the criterion.

⁴ Minimum Effluent hardness of 70 mg/l as CaCO₃ was used to calculate the criterion. (Maximum and minimum receiving water hardness = 221 mg/l and 120 mg/l, respectively).

⁵ Effluent and receiving water data from Jan 2002 to December 2002.

⁶ Determination based on annual average concentration.

⁷ RPA screening value.

4. WQBEL Calculations

- a. Water Quality-based effluent limitations for ammonia, copper, and zinc were calculated in accordance with section 1.4 of the SIP and the TSD.
- b. **Effluent Limitation Calculations.** In calculating maximum effluent limitations, the effluent concentration allowances were set equal to the criteria/standards/objectives.

$$ECA_{acute} = CMC \qquad ECA_{chronic} = CCC$$

For the human health, agriculture, or other long-term criterion/objective, a dilution credit can be applied. The ECA is calculated as follows:

$$ECA_{HH} = HH + D(HH - B)$$

where:

ECA_{acute} = effluent concentration allowance for acute (one-hour average) toxicity criterion

$ECA_{chronic}$ = effluent concentration allowance for chronic (four-day average) toxicity criterion

ECA_{HH} = effluent concentration allowance for human health, agriculture, or other long-term criterion/objective

CMC = criteria maximum concentration (one-hour average)

CCC = criteria continuous concentration (four-day average, unless otherwise noted)

HH = human health, agriculture, or other long-term criterion/objective

D = dilution credit

B = maximum receiving water concentration

Acute and chronic toxicity ECAs were then converted to equivalent long-term averages (LTA) using statistical multipliers and the lowest is used. Additional statistical multipliers were then used to calculate the maximum daily effluent limitation (MDEL) and the average monthly effluent limitation (AMEL).

Human health ECAs are set equal to the AMEL and a statistical multiplier is used to calculate the MDEL.

$$AMEL = mult_{AMEL} \left[\min \left(\overbrace{M_A ECA_{acute}}^{LTA_{acute}}, M_C ECA_{chronic} \right) \right]$$

$$MDEL = mult_{MDEL} \left[\min \left(M_A ECA_{acute}, \underbrace{M_C ECA_{chronic}}_{LTA_{chronic}} \right) \right]$$

$$MDEL_{HH} = \left(\frac{mult_{MDEL}}{mult_{AMEL}} \right) AMEL_{HH}$$

where: $mult_{AMEL}$ = statistical multiplier converting minimum LTA to AMEL
 $mult_{MDEL}$ = statistical multiplier converting minimum LTA to MDEL
 M_A = statistical multiplier converting CMC to LTA
 M_C = statistical multiplier converting CCC to LTA

Water quality-based effluent limitations were calculated for ammonia, copper, and zinc as follows in Tables F-6 through F-8, below.

Table F-6: WQBEL Calculations for Ammonia

	Acute (1-hr)	Chronic (30-day)	Chronic (4-day)
Criteria (µg/L) ⁽¹⁾	2.14	1.9	4.75
Dilution Credit	No Dilution	No Dilution	No Dilution
ECA	2.14	1.9	4.75
ECA Multiplier	0.527	1.38	0.715
LTA	1.13	2.6	3.4
AMEL Multiplier (95 th %)	1.18	(2)	(2)
AMEL (µg/L)	1.3	(2)	(2)
MDEL Multiplier (99 th %)	1.9	(2)	(2)
MDEL (µg/L)	2.1	(2)	(2)

⁽¹⁾ USEPA Ambient Water Quality Criteria

⁽²⁾ Limitations based on acute LTA [Acute LTA < Chronic (30-day) LTA < Chronic (4-day)]

Table F-7: WQBEL Calculations for Copper

	Acute	Chronic
Criteria, dissolved (µg/L) ⁽¹⁾	9.6	6.6
Dilution Credit	No Dilution	No Dilution
Translator ⁽²⁾	0.96	0.96
ECA, total recoverable ⁽³⁾	10	6.9
ECA Multiplier ⁽⁴⁾	0.527	0.715
LTA	5.27	4.9
AMEL Multiplier (95 th %) ⁽⁵⁾⁽⁶⁾	⁽⁸⁾	1.15
AMEL (µg/L)	⁽⁸⁾	5.6
MDEL Multiplier (99 th %) ⁽⁷⁾	⁽⁸⁾	1.9
MDEL (µg/L)	⁽⁸⁾	9.3

⁽¹⁾ CTR aquatic life criteria, based on effluent hardness of 70 mg/L as CaCO₃.

⁽²⁾ EPA Translator used as default.

⁽³⁾ ECA calculated per section 1.4.B, Step 2 of SIP.

⁽⁴⁾ Acute and Chronic ECA Multiplier calculated at 99th percentile per section 1.4.B, Step 3 of SIP or per sections 5.4.1 and 5.5.4 of the TSD.

⁽⁵⁾ Assumes sampling frequency n= 4.

⁽⁶⁾ The probability basis for AMEL is 95th percentile per section 1.4.B, Step 5 of SIP or section 5.5.4 of the TSD.

⁽⁷⁾ The probability basis for MDEL is 99th percentile per section 1.4.B, Step 5 of SIP or section 5.5.4 of the TSD.

⁽⁸⁾ Limitations based on acute LTA (Chronic LTA < Acute LTA)

Table F-8: WQBEL Calculations for Zinc

	Acute	Chronic
Criteria, dissolved (µg/L) ⁽¹⁾	87	87
Dilution Credit	No Dilution	No Dilution
Translator ⁽²⁾	0.978	0.986
ECA, total recoverable ⁽³⁾	88.96	88.23
ECA Multiplier ⁽⁴⁾	0.321	0.527
LTA	28.6	46.5
AMEL Multiplier (95 th %) ⁽⁵⁾⁽⁶⁾	1.32	⁽⁸⁾
AMEL (µg/L)	38	⁽⁸⁾
MDEL Multiplier (99 th %) ⁽⁷⁾	3.11	⁽⁸⁾
MDEL (µg/L)	89	⁽⁸⁾

⁽¹⁾ CTR aquatic life criteria, based on effluent hardness of 70 mg/L as CaCO₃.

⁽²⁾ EPA Translator used as default.

⁽³⁾ ECA calculated per section 1.4.B, Step 2 of SIP. This allows for the consideration of dilution.

⁽⁴⁾ Acute and Chronic ECA Multiplier calculated at 99th percentile per section 1.4.B, Step 3 of SIP or per sections 5.4.1 and 5.5.4 of the TSD.

⁽⁵⁾ Assumes sampling frequency n= 4.

⁽⁶⁾ The probability basis for AMEL is 95th percentile per section 1.4.B, Step 5 of SIP or section 5.5.4 of the TSD.

⁽⁷⁾ The probability basis for MDEL is 99th percentile per section 1.4.B, Step 5 of SIP or section 5.5.4 of the TSD.

⁽⁸⁾ Limitations based on acute LTA (Acute LTA < Chronic LTA)

**Summary of Water Quality-based Effluent Limitations
Discharge Point (D-001)**

Table F-9. Summary of Water Quality-Based Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
pH	Std. Units	---	---	---	6.5	8.5
Chlorine Residual	mg/L	0.01	---	0.02	---	---
Ammonia ²	mg/L	1.3	---	2.1	---	---
	lbs/day ¹	31.4	---	50.8	---	---
Manganese	µg/L	326 ⁴	---	---	---	---
Nitrate (as N)	mg/L	198 ⁴	---	---	---	---
Nitrite (as N)	mg/L	21 ⁴	---	---	---	---
Oil and Grease	µg/L	10	---	15	---	---
Copper, Total Recoverable ³	µg/L	5.6	---	9.3	---	---
Zinc, Total Recoverable ³	µg/L	38	---	89	---	---
Total Coliform Organisms	MPN/100 mL	---	23 ⁵	230	---	---
Acute Toxicity ⁶	% survival	---	---	---	---	---

Footnotes

¹ Based on a design flow of 2.9 million gallons per day

² Full compliance required by 1 September 2013

³ Full compliance required by 18 May 2010

⁴ Based on 20:1 dilution credit. More stringent performance-based effluent limitations implemented in this Order

⁵ 7-day median

⁶ Shall not be less than 70% survival in any one bioassay or less than 90% as a median of 3 consecutive bioassays

5. Whole Effluent Toxicity (WET)

For compliance with the Basin Plan's narrative toxicity objective, this Order requires the Discharger to conduct whole effluent toxicity testing for acute and chronic toxicity, as specified in the Monitoring and Reporting Program (Attachment E, Section V.). This Order also contains effluent limitations for acute toxicity and requires the Discharger to implement best management practices to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity.

- a. **Acute Aquatic Toxicity.** The Basin Plan contains a narrative toxicity objective that states, "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" (Basin Plan at III-8.00) The Basin Plan also states that, "...effluent limits based upon acute biotoxicity tests of effluents will be prescribed where appropriate...". USEPA Region 9 provided guidance for the development of acute toxicity effluent limitations in the absence of numeric water quality objectives for toxicity in its document titled "Guidance for NPDES Permit Issuance", dated February 1994. In section B.2. "Toxicity Requirements" (pgs. 14-15) it states that, "*In the absence of specific numeric water quality objectives for acute and chronic toxicity, the narrative criterion 'no toxics in toxic amounts' applies. Achievement of the narrative criterion, as applied herein, means that*

ambient waters shall not demonstrate for acute toxicity: 1) less than 90% survival, 50% of the time, based on the monthly median, or 2) less than 70% survival, 10% of the time, based on any monthly median. For chronic toxicity, ambient waters shall not demonstrate a test result of greater than 1 TUc."

Though effluent acute toxicity limitations were included in the previous Order, monitoring results were not available. Accordingly, annual effluent limitations for acute toxicity have been included in this Order as follows:

Acute Toxicity. Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:

Minimum for any one bioassay -----	70%
Median for any three or more consecutive bioassays -----	90%

- b. **Chronic Aquatic Toxicity.** The Basin Plan contains a narrative toxicity objective that states, "All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life." (Basin Plan at III-8.00) Adequate WET data is not available to determine if the discharge has reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan's narrative toxicity objective. Attachment E of this Order requires quarterly chronic WET monitoring for demonstration of compliance with the narrative toxicity objective.

In addition to WET monitoring, Special Provisions VI.C.2.a. requires the Discharger to submit to the Regional Water Board an Initial Investigative TRE Work Plan for approval by the Executive Officer, to ensure the Discharger has a plan to immediately move forward with the initial tiers of a TRE, in the event effluent toxicity is encountered in the future. The provision also includes a numeric toxicity monitoring trigger and requirements for accelerated monitoring, as well as, requirements for TRE initiation if a pattern of toxicity is demonstrated.

D. Final Effluent Limitations

1. Mass-based Effluent Limitations.

Title 40 CFR 122.45(f)(1) requires effluent limitations be expressed in terms of mass, with some exceptions, and 40 CFR 122.45(f)(2) allows pollutants that are limited in terms of mass to additionally be limited in terms of other units of measurement. This Order includes effluent limitations expressed in terms of mass and concentration. In addition, pursuant to the exceptions to mass limitations provided in 40 CFR 122.45(f)(1), some effluent limitations are not expressed in terms of mass, such as pH and temperature, and when the applicable standards are expressed in terms of concentration (e.g. CTR criteria and MCLs) and mass limitations are not necessary to protect the beneficial uses of the receiving water.

Mass-based effluent limitations were calculated based upon the permitted average daily discharge flow allowed in Section IV.A.1.f. of the Limitations and Discharge Requirements.

2. Averaging Periods for Effluent Limitations.

Title 40 CFR 122.45 (d) requires average weekly and average monthly discharge limitations for publicly owned treatment works (POTWs) unless impracticable. However, for toxic pollutants and pollutant parameters in water quality permitting, the US EPA recommends the use of a maximum daily effluent limitation in lieu of average weekly effluent limitations for two reasons. *"First, the basis for the 7-day average for POTWs derives from the secondary treatment requirements. This basis is not related to the need for assuring achievement of water quality standards. Second, a 7-day average, which could comprise up to seven or more daily samples, could average out peak toxic concentrations and therefore the discharge's potential for causing acute toxic effects would be missed."* (TSD, pg. 96) This Order utilizes maximum daily effluent limitations in lieu of average weekly effluent limitations for ammonia, copper, and zinc as recommended by the TSD for the achievement of water quality standards and for the protection of the beneficial uses of the receiving stream. Furthermore, for BOD, TSS, pH, and total coliform organisms, weekly average effluent limitations have been replaced or supplemented with effluent limitations utilizing shorter averaging periods. The rationale for using shorter averaging periods for these constituents is discussed in Attachment F, Section IV.C.3., above.

For effluent limitations based on Primary and Secondary MCLs, except nitrate, nitrite and manganese, this Order includes annual average effluent limitations. The Primary and Secondary MCLs are drinking water standards contained in Title 22 of the California Code of Regulations. Title 22 requires compliance with these standards on an annual average basis (except for nitrate and nitrite), when sampling at least quarterly. Since it is necessary to determine compliance on an annual average basis, it is impracticable to calculate average weekly and average monthly effluent limitations.

3. Satisfaction of Anti-Backsliding Requirements.

The previous Order contained average monthly and maximum daily effluent limitations for settleable solids of 0.1 ml/L and 0.2 ml/L, respectively, to ensure compliance with this Basin Plan narrative objective. Based on 431 samples from April 2003 – February 2007, the effluent settleable solids was never detected. All samples were <0.1 ml/L. Therefore, the discharge does not have a reasonable potential to cause or contribute to an exceedance of the Basin Plan's narrative objective for deposition of material, and the effluent limitations for settleable solids have not been carried forward.

The previous Order contained weekly average and 1-hr average effluent limitations for chlorine residual of 0.011 mg/L and 0.019 mg/L, respectively. The previous Order required daily monitoring of chlorine residual when discharging to Woods Creek and chlorine has never been detected in the effluent (<0.01). To determine compliance with a 1-hour average effluent limitation it is necessary to monitor the effluent continuously. Continuous monitoring is not appropriate for this Facility due to a long detention time in Quartz Reservoir; therefore, this Order used the TSD

procedures to convert 1-hr and 4-day average criteria to AMELs and MDELs. Consequently, this Order includes total residual chlorine effluent limitations of 0.01 mg/L and 0.02 mg/L, as the AMEL and MDEL, respectively, and requires daily effluent monitoring using grab samples when discharging to Woods Creek. The change in the averaging period for the chlorine residual effluent limitations is not less stringent than the previous Order, because the previous Order required daily grab samples for compliance. Thus, the change in averaging period for the chlorine residual effluent limitations does not constitute backsliding.

Removal of the settleable solids effluent limitation and the change in averaging periods for the chlorine residual effluent limitations is in compliance with federal anti-backsliding requirements of the CWA and Federal regulations, the antidegradation provisions of CFR Part 131.12, and State Water Resources Control Board Resolution 68-16. Any impact on existing water quality will be insignificant. All other effluent limitations in this Order are at least as stringent as the effluent limitations in the previous Order. This Order is consistent with the anti-backsliding requirements of the CWA and federal regulations.

4. Satisfaction of Antidegradation Policy

This Order does not allow for an increase in flow or mass of pollutants to the receiving water. Therefore, a complete antidegradation analysis is not necessary. The Order requires compliance with applicable federal technology-based standards and with water quality-based effluent limits (WQBELs) where the discharge could have the reasonable potential to cause or contribute to an exceedance of water quality standards.

The permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution 68-16. Compliance with these requirements will result in the use of best practicable treatment or control of the discharge. The impact on existing water quality will be insignificant.

Table F-10. Summary of Final Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
5-Day BOD	mg/L	30	45	60	---	---
	lbs/day ¹	726	1088	1452	---	---
Total Suspended Solids	mg/L	30	45	90	---	---
	lbs/day ¹	726	1088	2176	---	---
pH	Std. Units	--	--	--	6.5	8.5
Chlorine Residual	mg/L	0.01		0.02	---	---
Ammonia ²	mg/L	1.3		2.1	---	---
	lbs/day ¹	31.4		50.8	---	---
Manganese	µg/L	---	---	192 ⁴	---	---
Nitrate + Nitrite (as N)	µg/L			37 ⁴	---	---
Oil and Grease	µg/L	10		15	---	---
Copper, Total Recoverable ³	µg/L	5.6	--	9.3	---	---
Zinc, Total Recoverable ³	µg/L	38	--	89	---	---
Total Coliform Organisms	MPN/100 mL	---	23 ⁵	230	---	---
Acute Toxicity ⁶	% survival	---	---	---	---	---
Flow	mgd	2.9	---	---	---	---

¹ Based on a design flow of 2.9 million gallons per day

² Full compliance required by 1 September 2013

³ Full compliance required by 18 May 2010

⁴ Performance-based effluent limitation

⁵ 7-day median

⁶ Shall not be less than 70% survival in any one bioassay or less than 90% as a median of 3 consecutive bioassays.

E. Interim Effluent Limitations

1. **Constituents.** The SIP, section 2.2.1, requires that if a compliance schedule is granted for a CTR or NTR constituent, the Regional Water Board shall establish interim requirements and dates for their achievement in the NPDES permit. The interim limitations must be based on current treatment plant performance or existing permit limitations, whichever is more stringent. The State Water Board has held that the SIP may be used as guidance for non-CTR constituents. Therefore, the SIP requirement for interim effluent limitations has been applied to both CTR and non-CTR constituents in this Order.

In developing performance-based interim limitations, where there are 10 sampling data points or more, sampling and laboratory variability is accounted for by establishing interim limits that are based on normally distributed data where 99.9% of the data points will lie within 3.3 standard deviations of the mean (*Basic Statistical Methods for Engineers and Scientists, Kennedy and Neville, Harper and Row*). Therefore, the interim limitations in this Order are established as the mean plus 3.3 standard deviations of the available data.

When there are less than 10 sampling data points available, the *Technical Support Document for Water Quality- Based Toxics Control* ((EPA/505/2-90-001), TSD) recommends a coefficient of variation of 0.6 be utilized as representative of wastewater effluent sampling. The TSD recognizes that a minimum of 10 data points is necessary to conduct a valid statistical analysis. The multipliers contained in Table 5-2 of the TSD are used to determine a maximum daily limitation based on a long-term average objective. In this case, the long-term average objective is to maintain, at a minimum, the current plant performance level. Therefore, when there are less than 10 sampling points for a constituent, interim limitations are based on 3.11 times the maximum observed effluent concentration to obtain the daily maximum interim limitation (TSD, Table 5-2).

Interim limitations are established when compliance with effluent limitations cannot be achieved by the existing discharge. Discharge of constituents in concentrations in excess of the final effluent limitations, but in compliance with the interim effluent limitations, can significantly degrade water quality and adversely affect the beneficial uses of the receiving stream on a long-term basis. The interim limitations, however, establish an enforceable ceiling concentration until compliance with the effluent limitation can be achieved.

The procedure for calculating performance-based interim effluent limitations, discussed above, has been used in this Order to calculate performance-based effluent limitations for copper, manganese, nitrate + nitrite, and zinc. Table F-11 summarizes the calculations of the performance-based effluent limitations.

Table F-11. Performance-Based Effluent Limitation Calculation Summary

Parameter	Unit	MEC	Mean	Std. Dev.	# of Samples	Performance Based Limit
Copper, Total Recoverable	µg/L	16.4	10.67	3.26	12	21.4
Zinc, Total Recoverable	µg/L	149	55	35.53	12	172
Manganese, Total Recoverable	mg/L	122	67.56	37.6	12	192
Nitrate + Nitrite (as N)						
Nitrate (as N)	mg/L	6.3	2.5	2.15	16	9.6
Nitrite (as N)	mg/L	2.34	0.7	1.1	12	3.4
Ammonia (as N)	mg/L	18	14.0	2.97	16	24
Performance-based Limit	mg/L	Calculated as the sum of the performance-based limits for Nitrate, Nitrite, and Ammonia				37

F. Land Discharge Specifications – Not Applicable

Discharges to land regulated by separate waste discharge requirements.

G. Reclamation Specifications – Not Applicable

Discharges to land regulated by separate waste discharge requirements

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

Basin Plan water quality objectives to protect the beneficial uses of surface water and groundwater include numeric objectives and narrative objectives, including objectives for chemical constituents, toxicity, and tastes and odors. The toxicity objective requires that surface water and groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in humans, plants, animals, or aquatic life. The chemical constituent objective requires that surface water and groundwater shall not contain chemical constituents in concentrations that adversely affect any beneficial use or that exceed the maximum contaminant levels (MCLs) in Title 22, CCR. The tastes and odors objective states that surface water and groundwater shall not contain taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses. The Basin Plan requires the application of the most stringent objective necessary to ensure that surface water and groundwater do not contain chemical constituents, toxic substances, radionuclides, or taste and odor producing substances in concentrations that adversely affect domestic drinking water supply, agricultural supply, or any other beneficial use.

A. Surface Water

1. CWA section 303(a-c) requires states to adopt water quality standards, including criteria where they are necessary to protect beneficial uses. The Regional Water Board adopted water quality criteria as water quality objectives in the Basin Plan. The Basin Plan states that “[t]he numerical and narrative water quality objectives define the least stringent standards that the Regional Board will apply to regional waters in order to protect the beneficial uses.” The Basin Plan includes numeric and narrative water quality objectives for various beneficial uses and water bodies. This Order contains Receiving Surface Water Limitations based on the Basin Plan numerical and narrative water quality objectives for biostimulatory substances, chemical constituents, color, dissolved oxygen, floating material, oil and grease, pH, pesticides, radioactivity, salinity, sediment, settleable material, suspended material, tastes and odors, temperature, toxicity, turbidity, and electrical conductivity.

Numeric Basin Plan objectives for bacteria, dissolved oxygen, pH, temperature, and turbidity are applicable to this discharge and have been incorporated as Receiving Surface Water Limitations. Rational for these numeric receiving surface water limitations are as follows:

- a. **Bacteria.** The Woods Creek has been designated as having the beneficial use of contact recreation (REC-1). For water bodies designated as having REC-1 as a beneficial use, the Basin Plan includes a water quality objective limiting the “...fecal coliform concentration based on a minimum of not less than five samples for any 30-day period...” to a maximum geometric mean of 23 MPN/100 ml. The objective also states that “...[no] more than ten percent of the total number of

samples taken during any 30-day period [shall] exceed 240 MPN/100 ml." This objective is included in the Order as a receiving water limitation but the objective is restricted to 230 MPN/100ml to be consistent with the previous permit and to comply with anti-back sliding requirements.

- b. **Biostimulatory Substances.** The Basin Plan includes a water quality objective that *"[W]ater shall not contain biostimulatory substances which promote aquatic growths in concentrations that cause nuisance or adversely affect beneficial uses."* Receiving Water Limitations for biostimulatory substances are included in this Order and are based on the Basin Plan objective.
- c. **Color.** The Basin Plan includes a water quality objective that *"[W]ater shall be free of discoloration that causes nuisance or adversely affects beneficial uses."* Receiving Water Limitations for color are included in this Order and are based on the Basin Plan objective.
- d. **Chemical Constituents.** The Basin Plan includes a water quality objective that *"[W]aters shall not contain chemical constituents in concentrations that adversely affect beneficial uses."* Receiving Water Limitations for chemical constituents are included in this Order and are based on the Basin Plan objective.
- e. **Dissolved Oxygen.** The Woods Creek has been designated as having the beneficial use of cold freshwater aquatic habitat (COLD). For water bodies designated as having COLD as a beneficial use, the Basin Plan includes a water quality objective of maintaining a minimum of 7.0 mg/L of dissolved oxygen. Since the beneficial use of COLD does apply to the Woods Creek, a receiving water limitation of 7.0 mg/L for dissolved oxygen was included in this Order.

For surface water bodies outside of the Delta, the Basin Plan includes the water quality objective that *"...the monthly median of the mean daily dissolved oxygen (DO) concentration shall not fall below 85 percent of saturation in the main water mass, and the 95 percentile concentration shall not fall below 75 percent of saturation."* This objective was included as a receiving water limitation in this Order.

- f. **Floating Material.** The Basin Plan includes a water quality objective that *"[W]ater shall not contain floating material in amounts that cause nuisance or adversely affect beneficial uses."* Receiving Water Limitations for floating material are included in this Order and are based on the Basin Plan objective.
- g. **Oil and Grease.** The Basin Plan includes a water quality objective that *"[W]aters shall not contain oils, greases, waxes, or other materials in concentrations that cause nuisance, result in a visible film or coating on the surface of the water or on objects in the water, or otherwise adversely affect beneficial uses."* Receiving Water Limitations for oil and grease are included in this Order and are based on the Basin Plan objective.

- h. **pH.** The Basin Plan includes water quality objective that “[T]he pH shall not be depressed below 6.5 nor raised above 8.5. Changes in normal ambient pH levels shall not exceed 0.5 in fresh waters with designated COLD or WARM beneficial uses”. This Order includes receiving water limitations for both pH range and pH change.

The Basin Plan allows an appropriate averaging period for pH change in the receiving stream. Since there is no technical information available that indicates that aquatic organisms are adversely affected by shifts in pH within the 6.5 to 8.5 range, an averaging period is considered appropriate and a monthly averaging period for determining compliance with the 0.5 receiving water pH limitation is included in this Order.

- i. **Pesticides.** The Basin Plan includes a water quality objective for pesticides beginning on page III-6.00. Receiving Water Limitations for pesticides are included in this Order and are based on the Basin Plan objective.
- j. **Radioactivity.** The Basin Plan includes a water quality objective that “[R]adionuclides shall not be present in concentrations that are harmful to human, plant, animal or aquatic life nor that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal or aquatic life.” The Basin Plan states further that “[A]t a minimum, waters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of radionuclides in excess of the maximum contaminant levels (MCLs) specified in Table 4 (MCL Radioactivity) of Section 64443 of Title 22 of the California Code of Regulations...” Receiving Water Limitations for radioactivity are included in this Order and are based on the Basin Plan objective.
- k. **Sediment.** The Basin Plan includes a water quality objective that “[T]he suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses” Receiving Water Limitations for suspended sediments are included in this Order and are based on the Basin Plan objective.
- l. **Settleable Material.** The Basin Plan includes a water quality objective that “[W]aters shall not contain substances in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses.” Receiving Water Limitations for settleable material are included in this Order and are based on the Basin Plan objective.
- m. **Suspended Material.** The Basin Plan includes a water quality objective that “[W]aters shall not contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses.” Receiving Water Limitations for suspended material are included in this Order and are based on the Basin Plan objective.

- n. **Taste and Odors.** The Basin Plan includes a water quality objective that “[W]ater shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to domestic or municipal water supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses.” Receiving Water Limitations for taste- or odor-producing substances are included in this Order and are based on the Basin Plan objective.
- o. **Temperature.** The Woods Creek has the beneficial uses of both COLD and WARM. The Basin Plan includes the objective that “[a]t no time or place shall the temperature of COLD or WARM intrastate waters be increased more than 5°F above natural receiving water temperature.” This Order includes a receiving water limitation based on this objective.
- p. **Toxicity.** The Basin Plan includes a water quality objective that “[A]ll waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.” Receiving Water Limitations for toxicity are included in this Order and are based on the Basin Plan objective.
- q. **Turbidity.** The Basin Plan includes a water quality objective that “[I]ncreases in turbidity attributable to controllable water quality factors shall not exceed the following limits:
- Where natural turbidity is between 0 and 5 Nephelometric Turbidity Units (NTUs), increases shall not exceed 1 NTU.
 - Where natural turbidity is between 5 and 50 NTUs, increases shall not exceed 20 percent.
 - Where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTUs.
 - Where natural turbidity is greater than 100 NTUs, increases shall not exceed 10 percent.”

A numeric Receiving Surface Water Limitation for turbidity is included in this Order and is based on the Basin Plan objective for turbidity

B. Groundwater– Not Applicable

Discharges to land regulated by separate waste discharge requirements.

VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

Section 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 authorizes the Regional Water Board to require technical and monitoring reports. The Monitoring and Reporting Program (MRP), Attachment E of this Order, establishes monitoring and reporting requirements to implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the MRP for this facility.

A. Influent Monitoring

1. Influent monitoring is required to collect data on the characteristics of the wastewater and to assess compliance with effluent limitations (e.g., BOD and TSS reduction requirements).

B. Effluent Monitoring

1. Pursuant to the requirements of 40 CFR §122.44(i)(2) effluent monitoring is required for all constituents with effluent limitations. Effluent monitoring is necessary to assess compliance with effluent limitations, assess the effectiveness of the treatment process, and to assess the impacts of the discharge on the receiving stream.

C. Whole Effluent Toxicity Testing Requirements

1. **Acute Toxicity.** Quarterly 96-hour bioassay testing is required to demonstrate compliance with the effluent limitation for acute toxicity.
2. **Chronic Toxicity.** Quarterly chronic whole effluent toxicity testing is required in order to demonstrate compliance with the Basin Plan's narrative toxicity objective.

D. Receiving Water Monitoring

1. Surface Water

- a. Receiving water monitoring is necessary to assess compliance with receiving water limitations and to assess the impacts of the discharge on the receiving stream.

2. Groundwater – Not Applicable

Discharges to land regulated by separate waste discharge requirements.

E. Other Monitoring Requirements

1. Biosolids Monitoring – Not Applicable

Discharges to land regulated by separate waste discharge requirements.

2. Water Supply Monitoring

Water supply monitoring is required to evaluate the source of constituents in the wastewater.

VII. RATIONALE FOR PROVISIONS

A. Standard Provisions

Standard Provisions, which apply to all NPDES permits in accordance with section 122.41, and additional conditions applicable to specified categories of permits in accordance with section 122.42, are provided in Attachment D. The discharger must comply with all standard provisions and with those additional conditions that are applicable under section 122.42.

Section 122.41(a)(1) and (b) through (n) establish conditions that apply to all State-issued NPDES permits. These conditions must be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to the regulations must be included in the Order. Section 123.25(a)(12) allows the state to omit or modify conditions to impose more stringent requirements. In accordance with section 123.25, this Order omits federal conditions that address enforcement authority specified in sections 122.41(j)(5) and (k)(2) because the enforcement authority under the Water Code is more stringent. In lieu of these conditions, this Order incorporates by reference Water Code section 13387(e).

B. Special Provisions

1. Reopener Provisions

- a. **Pollution Prevention (Special Provision VI.C.1.b).** This Order requires the Discharger prepare and implement pollution prevention plans following CWC section 13263.3(d)(3) for *copper, and zinc*. This re-opener provision allows the Regional Water Board to reopen this Order for addition and/or modification of effluent limitations and requirements for these constituents based on a review of the pollution prevention plans.
- b. **Whole Effluent Toxicity (Special Provision VI.C.1.c).** This Order requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity through a Toxicity Reduction Evaluation (TRE). This Order may be reopened to include a numeric chronic toxicity limitation, a new acute toxicity limitation, and/or a limitation for a specific toxicant identified in the TRE. Additionally, if a numeric chronic toxicity water quality objective is adopted by the State Water Board, this Order may be reopened to include a numeric chronic toxicity limitation based on that objective.

- c. **Water Effects Ratio (WER) and Metal Translators- (Special Provision VI.C.1.d).** A default WER of 1.0 has been used in this Order for calculating CTR criteria for applicable priority pollutant inorganic constituents. In addition, default dissolved-to-total metal translators have been used to convert water quality objectives from dissolved to total recoverable when developing effluent limitations for copper, lead and zinc. If the Discharger performs studies to determine site-specific WERs and/or site-specific dissolved-to-total metal translators, this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.
- d. **Bis(2-ethylhexyl)phthalate – (Special Provision VI.C.1.e).** Bis(2-ethylhexyl) phthalate was detected in high concentrations in both the effluent and upstream receiving water samples taken during the same period. A single sample with a concentration of 9 µg/L in the receiving water is highly unusual. The Regional Water Board does not have confidence that the above results are representative of the discharge or the receiving water. Therefore, this Order requires the Discharger to conduct a 1-year study to sample monthly for bis(2-ethylhexyl) phthalate in the effluent and receiving water using clean sampling techniques. Should monitoring results indicate that the discharge has a reasonable potential to cause or contribute to an exceedance of the human health water quality criteria, this re-opener provision allows the Regional Water Board to reopen this Order for addition of new effluent limitations for bis(2-ethylhexyl) phthalate.
- e. **Mixing Zone/Dilution Study (Special Provision VI.C.1.f).** Section 1.4.2.2 of the SIP requires the Discharger to submit receiving water mixing zone studies prior to allowing dilution credits. This Order does not allow dilution credits for acute and chronic aquatic life criteria due to insufficient information. Should the Discharger conduct a mixing zone study to evaluate the appropriateness for dilution credits for compliance with aquatic life criteria, the Regional Water Board will review such studies and if warranted, may reopen this permit to make appropriate changes to the water quality-based effluent limitations.

2. Special Studies and Additional Monitoring Requirements

- a. **Chronic Whole Effluent Toxicity Requirements.** The Basin Plan contains a narrative toxicity objective that states, "All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life." (Basin Plan at III-8.00.) Adequate WET data is not available to determine if the discharge has reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan's narrative toxicity objective. Attachment E of this Order requires Quarterly chronic WET monitoring for demonstration of compliance with the narrative toxicity objective.

In addition to WET monitoring, this provision requires the Discharger to submit to the Regional Water Board an Initial Investigative TRE Work Plan for approval by the Executive Officer, to ensure the Discharger has a plan to immediately move forward with the initial tiers of a TRE, in the event effluent toxicity is encountered

in the future. The provision also includes a numeric toxicity monitoring trigger and requirements for accelerated monitoring, as well as, requirements for TRE initiation if a pattern of toxicity is demonstrated.

Monitoring Trigger. A numeric toxicity monitoring trigger of $> 1 \text{ TUc}$ (where $\text{TUc} = 100/\text{NOEC}$) is applied in the provision because this Order does not allow any dilution for the chronic condition. Therefore, a TRE is triggered when the effluent exhibits a pattern of toxicity at 100% effluent.

Accelerated Monitoring. The provision requires accelerated WET testing when a regular WET test result exceeds the monitoring trigger. The purpose of accelerated monitoring is to determine, in an expedient manner, whether there is a pattern of toxicity before requiring the implementation of a TRE. Due to possible seasonality of the toxicity, the accelerated monitoring should be performed in a timely manner, preferably taking no more than 2 to 3 months to complete.

The provision requires accelerated monitoring consisting of four chronic toxicity tests in a six week period (i.e. one every two weeks) using the species that exhibited toxicity. Guidance regarding accelerated monitoring and TRE initiation is provided in the *Technical Support Document for Water Quality-based Toxics Control, EPA/505/2-90-001, March 1991* (TSD). The TSD at page 118 states, "EPA recommends if toxicity is repeatedly or periodically present at levels above effluent limits more than 20 percent of the time, a TRE should be required." Therefore, four accelerated monitoring tests are required in this provision. If no toxicity is demonstrated in the four accelerated tests, then it demonstrates that toxicity is not present at levels above the monitoring trigger more than 20 percent of the time (only 1 of 5 tests are toxic, including the initial test). However, notwithstanding the accelerated monitoring results, if there is adequate evidence of a pattern of effluent toxicity (i.e. toxicity present exceeding the monitoring trigger more than 20 percent of the time), the Executive Officer may require that the Discharger initiate a TRE.

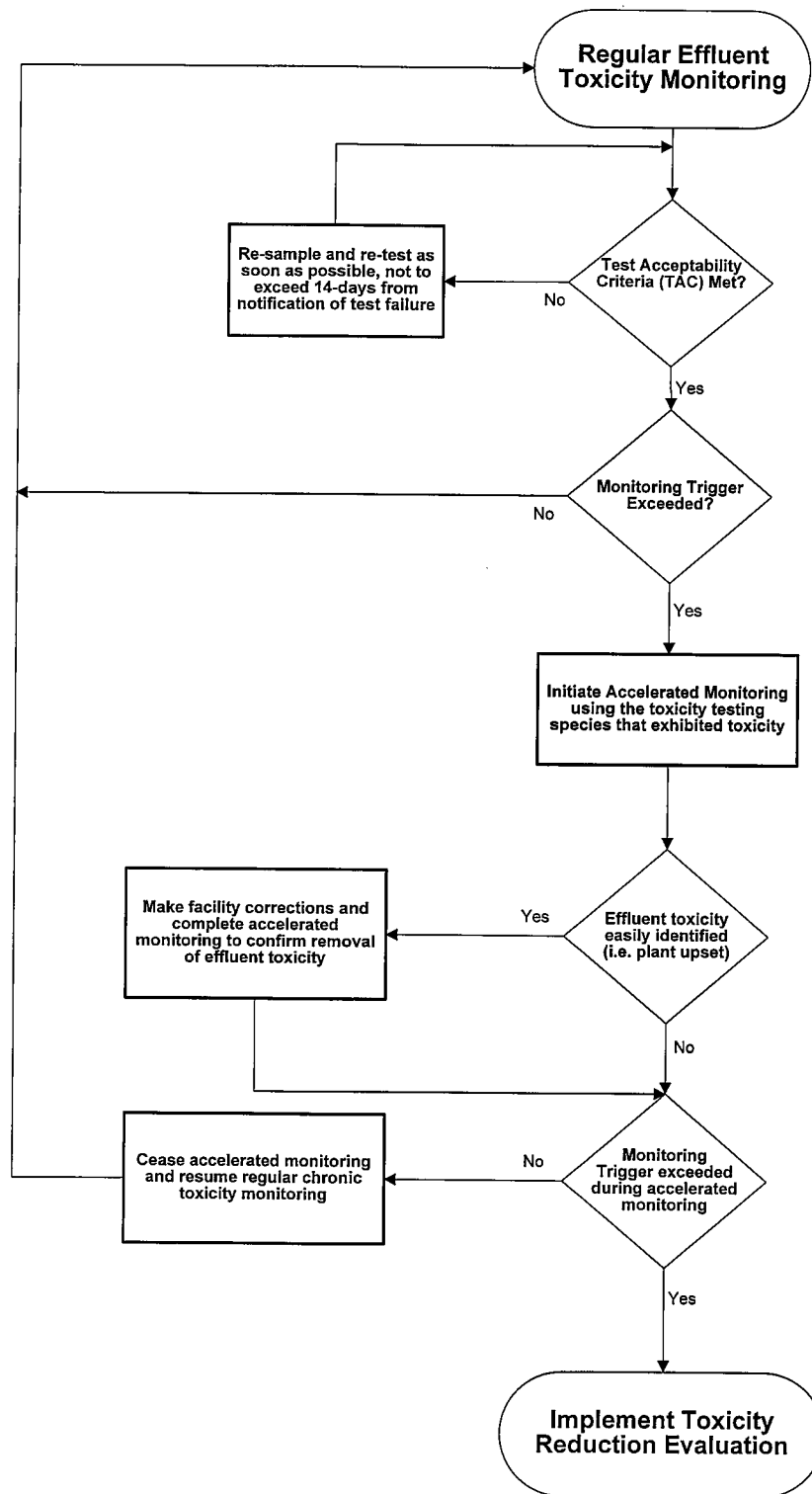
See the WET Accelerated Monitoring Flow Chart (Figure F-1), below, for further clarification of the accelerated monitoring requirements and for the decision points for determining the need for TRE initiation.

TRE Guidance. The Discharger is required to prepare a TRE Work Plan in accordance with USEPA guidance. Numerous guidance documents are available, as identified below:

- *Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants*, (EPA/833B-99/002), August 1999.
- *Generalized Methodology for Conducting Industrial TREs*, (EPA/600/2-88/070), April 1989.

- *Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures*, Second Edition, EPA 600/6-91/005F, February 1991.
- *Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I*, EPA 600/6-91/005F, May 1992.
- *Methods for Aquatic Toxicity Identification Evaluations: Phase II Toxicity Identification Procedures for Samples Exhibiting acute and Chronic Toxicity*, Second Edition, EPA 600/R-92/080, September 1993.
- *Methods for Aquatic Toxicity Identification Evaluations: Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity*, Second Edition, EPA 600/R-92/081, September 1993.
- *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, Fifth Edition, EPA-821-R-02-012, October 2002.
- *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*, Fourth Edition, EPA-821-R-02-013, October 2002.
- *Technical Support Document for Water Quality-based Toxics Control*, EPA/505/2-90-001, March 1991.

Figure F-1
WET Accelerated Monitoring Flow Chart



- b. **Effluent and Receiving Water Characterization Study.** An effluent and receiving water monitoring study is required to ensure sufficient information is available for the next permit renewal. During the term of the permit, the Discharger is required to conduct semi-annual monitoring of the effluent at EFF-001 and of the receiving water at RSW-001, with the exception that dioxin and furan sampling shall be conducted only once during the permit term at these locations. The Discharger is required to monitor for all priority pollutants and other constituents of concern as described in Attachment H. This information will be used for development of the next permit renewal.
- c. **Effluent and Receiving Water Bis(2-ethylhexyl)phthalate Study.** The MEC for bis(2-ethylhexyl)phthalate was 11 µg/L based on 4 samples collected between January 2002 and December 2002. Bis(2-ethylhexyl) phthalate was also detected in the upstream receiving water at 9 µg/L in one of the 4 samples taken during the same period. A concentration of 9 µg/L in the receiving water is highly unusual. Bis(2-ethylhexyl) phthalate samples can be easily contaminated when plastic sample containers are used or by the use of rubber gloves. Therefore, the Regional Water Board does not have confidence that the above results are representative of the discharge or the receiving water and a reasonable potential analysis (RPA) could not be performed for bis(2-ethylhexyl) phthalate. To ensure representative data is available to conduct an RPA, this Order requires an effluent and receiving water monitoring study to evaluate bis(2-ethylhexyl)phthalate concentrations using clean techniques. During the first discharge season after adoption of the permit, the Discharger shall conduct monthly monitoring of the effluent at EFF-001 and of the receiving water at RSW-001 for bis(2-ethylhexyl)phthalate. Should monitoring results indicate that the discharge has a reasonable potential to cause or contribute to an exceedance of the NTR human health water quality criteria, this Order may be reopened to add an effluent limit for bis(2-ethylhexyl) phthalate.

3. Best Management Practices and Pollution Prevention

- a. **Surface Water Discharge Minimization Program.** In order to maximize land disposal, the Discharger evaluated several irrigation sites to accommodate the long-term disposal needs projected for build-out in its 2005 Feasibility Study. This evaluation also included expanding the existing effluent storage facilities or constructing new facilities at new sites. In addition, potential factors to reduce wastewater flows were also considered and their estimated impact on effluent storage requirements were estimated. The 2005 Feasibility Study concluded the alternatives that best meet the long-term needs of the TUD is the addition of land for irrigation, the retention of the ability for seasonal surface water discharge during high precipitation years, and increased storage.

In an effort to minimize surface water discharges from Quartz Reservoir to Woods Creek, this Order requires the Discharger to continue to spray or flood irrigate fodder crops and pasture lands with the reclaimed wastewater during the wintertime when the conditions are suitable for irrigation. In addition, the

Discharger is required to implement water conservation efforts to minimize wastewater flows into Quartz Reservoir. The Discharger is required to submit annual progress reports describing its efforts to minimize surface water discharges from Quartz Reservoir to Woods Creek.

- b. **Salinity Evaluation and Minimization Plan.** In an effort to monitor progress in reducing salinity discharges to the Woods Creek, the Discharger is required to provide annual reports demonstrating reasonable progress in the reduction of salinity in its discharge to the Woods Creek. The annual reports to be submitted in accordance with the Monitoring and Reporting Program (Attachment E, Section X.D.1.).
- c. **CWC section 13263.3(d)(3) Pollution Prevention Plans.** The pollution prevention plans required for ammonia, copper, and zinc shall, at minimum, meet the requirements outlined in CWC section 13263.3(d)(3). The minimum requirements for the pollution prevention plans include the following:
 - i. An estimate of all of the sources of a pollutant contributing, or potentially contributing, to the loadings of a pollutant in the treatment plant influent.
 - ii. An analysis of the methods that could be used to prevent the discharge of the pollutants into the Facility, including application of local limits to industrial or commercial dischargers regarding pollution prevention techniques, public education and outreach, or other innovative and alternative approaches to reduce discharges of the pollutant to the Facility. The analysis also shall identify sources, or potential sources, not within the ability or authority of the Discharger to control, such as pollutants in the potable water supply, airborne pollutants, pharmaceuticals, or pesticides, and estimate the magnitude of those sources, to the extent feasible.
 - iii. An estimate of load reductions that may be attained through the methods identified in subparagraph ii.
 - iv. A plan for monitoring the results of the pollution prevention program.
 - v. A description of the tasks, cost, and time required to investigate and implement various elements in the pollution prevention plan.
 - vi. A statement of the Discharger's pollution prevention goals and strategies, including priorities for short-term and long-term action, and a description of the Discharger's intended pollution prevention activities for the immediate future.
 - vii. A description of the Discharger's existing pollution prevention programs.
 - viii. An analysis, to the extent feasible, of any adverse environmental impacts, including cross-media impacts or substitute chemicals that may result from the implementation of the pollution prevention program.
 - ix. An analysis, to the extent feasible, of the costs and benefits that may be incurred to implement the pollution prevention program.

- d. **Water Conservation Program.** The Discharger shall develop and implement a comprehensive Water Conservation Program (Program) in an effort to minimize wastewater flows into Quartz Reservoir. The Program shall be completed in accordance with the guidelines provided in Attachment – I. As an alternative to developing an independent Program, the Discharger may become a signatory to the *Memorandum of Understanding Regarding Urban Water Conservation in California*.

4. Construction, Operation, and Maintenance Specifications

This Order requires precluding public contact with wastewater, in and around the outfall to Woods Creek, by construction of fences, signs, and other acceptable alternatives.

5. Special Provisions for Municipal Facilities (POTWs Only)

- a. **Collection System:** The Discharger's collection system is part of the treatment system that is subject to the Order 94-192, adopted by the State Water Board on May 2006. This Order is a Statewide General WDR for Sanitary Sewer Systems. Therefore, the Discharger shall be subject to the requirements of Order 2006-0003 and any future revisions thereto. Pursuant to federal regulations, the Discharger must properly operate and maintain its collection system [40 CFR section 122.41(e)], report any non-compliance [40 CFR section 122.41(l)(6) and (7)], and mitigate any discharge from the collection system in violation of this Order [40 CFR. section 122.41(d)].
- b. **Electronic Notification:** Since the Monitoring and Reporting Program is a part of this permit and the disposal facility at the Quartz Reservoir is not staffed on a full time basis, certain parameters which are necessary to be monitored on a continuous basis requires an electronic system to be established for operator notification and for continuous recording device alarms. .

6. Other Special Provisions

The purpose of this provision is that in the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Regional Water Board.

7. Compliance Schedules

The use and location of compliances schedules in the permit depends on the Discharger's ability to comply and the source of the applied water quality criteria

- a. At the time the tentative NPDES permit was issued, the Discharger had not submitted a request, and justification for compliance schedules for ammonia, copper, and zinc. Therefore, this Order requires the Discharger to submit an infeasibility analysis in accordance with Paragraph 3, items (a) through (d), of Section 2.1 of the SIP. This Order establishes compliance schedules for the new, final, water quality-based effluent limitations for ammonia, copper, and zinc and requires full compliance by May 18, 2010 for copper and zinc and 1 October 2013 for ammonia. However, these compliance schedules are contingent on the submittal of acceptable infeasibility analyses by the effective date of this Order.

VIII. PUBLIC PARTICIPATION

The California Regional Water Quality Control Board, Central Valley Region (Regional Water Board) is considering the issuance of waste discharge requirements (WDRs) that will serve as a National Pollutant Discharge Elimination System (NPDES) permit for the Tuolumne Utilities District. As a step in the WDR adoption process, the Regional Water Board staff has developed tentative WDRs. The Regional Water Board encourages public participation in the WDR adoption process.

A. Notification of Interested Parties

The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Notification was provided through direct mailing to agencies and known interested parties, and the posting of the NOPH at the Discharger's offices and the local post office.

B. Written Comments

The staff determinations are tentative. Interested persons are invited to submit written comments concerning these tentative WDRs. Comments must be submitted either in person or by mail to the Executive Office at the Regional Water Board at the address above on the cover page of this Order.

To be fully responded to by staff and considered by the Regional Water Board, written comments should be received at the Regional Water Board offices by 5:00 p.m. on **24 September 2008**.

C. Public Hearing

The Regional Water Board will hold a public hearing on the tentative WDRs during its regular Board meeting on the following date and time and at the following location:

Date: 23/24 October 2008
Time: 8:30 am
Location: Regional Water Quality Control Board, Central Valley Region

11020 Sun Center Dr., Suite #200
Rancho Cordova, CA 95670

Interested persons are invited to attend. At the public hearing, the Regional Water Board will hear testimony, if any, pertinent to the discharge, WDRs, and permit. Oral testimony will be heard; however, for accuracy of the record, important testimony should be in writing.

Please be aware that dates and venues may change. Our Web address is <http://www.waterboards.ca.gov/rwqcb5/> where you can access the current agenda for changes in dates and locations.

D. Waste Discharge Requirements Petitions

Any aggrieved person may petition the State Water Resources Control Board to review the decision of the Regional Water Board regarding the final WDRs. The petition must be submitted within 30 days of the Regional Water Board's action to the following address:

State Water Resources Control Board
Office of Chief Counsel
P.O. Box 100, 1001 I Street
Sacramento, CA 95812-0100

E. Information and Copying

The Report of Waste Discharge (RWD), related documents, tentative effluent limitations and special provisions, comments received, and other information are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Regional Water Board by calling 916-464-4645

F. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the Regional Water Board, reference this facility, and provide a name, address, and phone number.

G. Additional Information

Requests for additional information or questions regarding this order should be directed to Anand Mamidi at 916-464-4853.

ATTACHMENT G – Ammonia Interim Effluent Limitations

Table G-1: Ammonia Interim Effluent Limitations

pH	AMEL (mg/L as N)										MDEL (mg/L as N)
	Temperature, °C										
	0	14	16	18	20	22	24	26	28	30	
6.5	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8
6.6	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8
6.7	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.7	23.8
6.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.2	23.8
6.9	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	22.5	23.8
7.0	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	21.8	23.8
7.1	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	20.9	23.8
7.2	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	22.6	19.9	23.8
7.3	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	21.3	18.7	23.8
7.4	23.8	23.8	23.8	23.8	23.8	23.8	23.8	22.6	19.8	17.4	23.8
7.5	23.8	23.8	23.8	23.8	23.8	23.8	23.7	20.8	18.3	16.1	23.8
7.6	23.8	23.8	23.8	23.8	23.8	23.8	21.6	19.0	16.7	14.7	23.8
7.7	23.8	23.8	23.8	23.8	23.8	22.1	19.4	17.1	15.0	13.2	23.8
7.8	23.8	23.8	23.8	23.8	22.3	19.6	17.3	15.2	13.3	11.7	23.8
7.9	23.8	23.8	23.8	22.4	19.6	17.3	15.2	13.3	11.7	10.3	23.8
8.0	23.8	23.8	22.1	19.4	17.1	15.0	13.2	11.6	10.2	8.97	23.8
8.1	21.0	21.0	19.1	16.8	14.7	12.9	11.4	10.0	8.79	7.73	23.8
8.2	17.9	17.9	16.3	14.3	12.6	11.1	9.73	8.55	7.52	6.61	23.8
8.3	15.2	15.2	13.9	12.2	10.7	9.41	8.27	7.27	6.39	5.62	23.8
8.4	12.9	12.9	11.7	10.3	9.06	7.96	7.00	6.15	5.41	4.75	23.8
8.5	10.9	10.9	9.90	8.70	7.65	6.72	5.91	5.20	4.57	4.01	21.4
8.6	9.20	9.20	8.36	7.35	6.46	5.68	4.99	4.39	3.86	3.39	17.7
8.7	7.78	7.78	7.07	6.22	5.47	4.80	4.22	3.71	3.26	2.87	14.7
8.8	6.61	6.61	6.01	5.28	4.64	4.08	3.59	3.15	2.77	2.44	12.3
8.9	5.65	5.65	5.13	4.51	3.97	3.49	3.06	2.69	2.37	2.08	10.4
9.0	4.86	4.86	4.42	3.89	3.42	3.00	2.64	2.32	2.04	1.79	8.85

Attachment H - Constituents to be monitored

			Controlling Water Quality Criterion for Surface Waters			
CTR #	Constituent	CAS Number	Basis	Criterion Concentration (ug/L or noted) (1)	Criterion Quantitation Limit (ug/L or noted)	Suggested Test Methods
VOLATILE ORGANICS						
28	1,1-Dichloroethane	75343	Primary MCL	5	0.5	EPA 8260B
30	1,1-Dichloroethene	75354	National Toxics Rule	0.057	0.5	EPA 8260B
41	1,1,1-Trichloroethane	71556	Primary MCL	200	0.5	EPA 8260B
42	1,1,2-Trichloroethane	79005	National Toxics Rule	0.6	0.5	EPA 8260B
37	1,1,2,2-Tetrachloroethane	79345	National Toxics Rule	0.17	0.5	EPA 8260B
75	1,2-Dichlorobenzene	95501	Taste & Odor	10	0.5	EPA 8260B
29	1,2-Dichloroethane	107062	National Toxics Rule	0.38	0.5	EPA 8260B
	cis-1,2-Dichloroethene	156592	Primary MCL	6	0.5	EPA 8260B
31	1,2-Dichloropropane	78875	Calif. Toxics Rule	0.52	0.5	EPA 8260B
101	1,2,4-Trichlorobenzene	120821	Public Health Goal	5	0.5	EPA 8260B
76	1,3-Dichlorobenzene	541731	Taste & Odor	10	0.5	EPA 8260B
32	1,3-Dichloropropene	542756	Primary MCL	0.5	0.5	EPA 8260B
77	1,4-Dichlorobenzene	106467	Primary MCL	5	0.5	EPA 8260B
17	Acrolein	107028	Aquatic Toxicity	21	2	EPA 8260B
18	Acrylonitrile	107131	National Toxics Rule	0.059	2	EPA 8260B
19	Benzene	71432	Primary MCL	1	0.5	EPA 8260B
20	Bromoform	75252	Calif. Toxics Rule	4.3	0.5	EPA 8260B
34	Bromomethane	74839	Calif. Toxics Rule	48	1	EPA 8260B
21	Carbon tetrachloride	56235	National Toxics Rule	0.25	0.5	EPA 8260B
22	Chlorobenzene (mono chlorobenzene)	108907	Taste & Odor	50	0.5	EPA 8260B
24	Chloroethane	75003	Taste & Odor	16	0.5	EPA 8260B
25	2- Chloroethyl vinyl ether	110758	Aquatic Toxicity	122 (3)	1	EPA 8260B
26	Chloroform	67663	OEHHHA Cancer Risk	1.1	0.5	EPA 8260B
35	Chloromethane	74873	USEPA Health Advisory	3	0.5	EPA 8260B
23	Dibromochloromethane	124481	Calif. Toxics Rule	0.41	0.5	EPA 8260B
27	Dichlorobromomethane	75274	Calif. Toxics Rule	0.56	0.5	EPA 8260B
36	Dichloromethane	75092	Calif. Toxics Rule	4.7	0.5	EPA 8260B
33	Ethylbenzene	100414	Taste & Odor	29	0.5	EPA 8260B
88	Hexachlorobenzene	118741	Calif. Toxics Rule	0.00075	1	EPA 8260B
89	Hexachlorobutadiene	87683	National Toxics Rule	0.44	1	EPA 8260B
91	Hexachloroethane	67721	National Toxics Rule	1.9	1	EPA 8260B
94	Naphthalene	91203	USEPA IRIS	14	10	EPA 8260B
38	Tetrachloroethene	127184	National Toxics Rule	0.8	0.5	EPA 8260B
39	Toluene	108883	Taste & Odor	42	0.5	EPA 8260B
40	trans-1,2-Dichloroethylene	156605	Primary MCL	10	0.5	EPA 8260B
43	Trichloroethene	79016	National Toxics Rule	2.7	0.5	EPA 8260B
44	Vinyl chloride	75014	Primary MCL	0.5	0.5	EPA 8260B
	Methyl-tert-butyl ether (MTBE)	1634044	Secondary MCL	5	0.5	EPA 8260B
	Trichlorofluoromethane	75694	Primary MCL	150	5	EPA 8260B
	1,1,2-Trichloro-1,2,2-Trifluoroethane	76131	Primary MCL	1200	10	EPA 8260B
	Styrene	100425	Taste & Odor	11	0.5	EPA 8260B
	Xylenes	1330207	Taste & Odor	17	0.5	EPA 8260B

SEMI-VOLATILE ORGANICS						
60	1,2-Benzanthracene	56553	Calif. Toxics Rule	0.0044	5	EPA 8270C
85	1,2-Diphenylhydrazine	122667	National Toxics Rule	0.04	1	EPA 8270C
45	2-Chlorophenol	95578	Taste and Odor	0.1	2	EPA 8270C
46	2,4-Dichlorophenol	120832	Taste and Odor	0.3	1	EPA 8270C
47	2,4-Dimethylphenol	105679	Calif. Toxics Rule	540	2	EPA 8270C
49	2,4-Dinitrophenol	51285	National Toxics Rule	70	5	EPA 8270C
82	2,4-Dinitrotoluene	121142	National Toxics Rule	0.11	5	EPA 8270C
55	2,4,6-Trichlorophenol	88062	Taste and Odor	2	10	EPA 8270C
83	2,6-Dinitrotoluene	606202	USEPA IRIS	0.05	5	EPA 8270C
50	2-Nitrophenol	25154557	Aquatic Toxicity	150 (5)	10	EPA 8270C
71	2-Chloronaphthalene	91587	Aquatic Toxicity	1600 (6)	10	EPA 8270C
78	3,3'-Dichlorobenzidine	91941	National Toxics Rule	0.04	5	EPA 8270C
62	3,4-Benzofluoranthene	205992	Calif. Toxics Rule	0.0044	10	EPA 8270C
52	4-Chloro-3-methylphenol	59507	Aquatic Toxicity	30	5	EPA 8270C
48	4,6-Dinitro-2-methylphenol	534521	National Toxics Rule	13.4	10	EPA 8270C
51	4-Nitrophenol	100027	USEPA Health Advisory	60	5	EPA 8270C
69	4-Bromophenyl phenyl ether	101553	Aquatic Toxicity	122	10	EPA 8270C
72	4-Chlorophenyl phenyl ether	7005723	Aquatic Toxicity	122 (3)	5	EPA 8270C
56	Acenaphthene	83329	Taste and Odor	20	1	EPA 8270C
57	Acenaphthylene	208968	No Criteria Available		10	EPA 8270C
58	Anthracene	120127	Calif. Toxics Rule	9,600	10	EPA 8270C
59	Benzidine	92875	National Toxics Rule	0.00012	5	EPA 8270C
61	Benzo(a)pyrene (3,4-Benzopyrene)	50328	Calif. Toxics Rule	0.0044	0.1	EPA 8270C
63	Benzo(g,h,i)perylene	191242	No Criteria Available		5	EPA 8270C
64	Benzo(k)fluoranthene	207089	Calif. Toxics Rule	0.0044	2	EPA 8270C
65	Bis(2-chloroethoxy) methane	111911	No Criteria Available		5	EPA 8270C
66	Bis(2-chloroethyl) ether	111444	National Toxics Rule	0.031	1	EPA 8270C
67	Bis(2-chloroisopropyl) ether	39638329	Aquatic Toxicity	122 (3)	10	EPA 8270C
68	Bis(2-ethylhexyl) phthalate	117817	National Toxics Rule	1.8	3	EPA 8270C
70	Butyl benzyl phthalate	85687	Aquatic Toxicity	3 (7)	10	EPA 8270C
73	Chrysene	218019	Calif. Toxics Rule	0.0044	5	EPA 8270C
81	Di-n-butylphthalate	84742	Aquatic Toxicity	3 (7)	10	EPA 8270C
84	Di-n-octylphthalate	117840	Aquatic Toxicity	3 (7)	10	EPA 8270C
74	Dibenzo(a,h)-anthracene	53703	Calif. Toxics Rule	0.0044	0.1	EPA 8270C
79	Diethyl phthalate	84662	Aquatic Toxicity	3 (7)	2	EPA 8270C
80	Dimethyl phthalate	131113	Aquatic Toxicity	3 (7)	2	EPA 8270C
86	Fluoranthene	206440	Calif. Toxics Rule	300	10	EPA 8270C
87	Fluorene	86737	Calif. Toxics Rule	1300	10	EPA 8270C
90	Hexachlorocyclopentadiene	77474	Taste and Odor	1	1	EPA 8270C
92	Indeno(1,2,3-c,d)pyrene	193395	Calif. Toxics Rule	0.0044	0.05	EPA 8270C
93	Isophorone	78591	National Toxics Rule	8.4	1	EPA 8270C
98	N-Nitrosodiphenylamine	86306	National Toxics Rule	5	1	EPA 8270C
96	N-Nitrosodimethylamine	62759	National Toxics Rule	0.00069	5	EPA 8270C
97	N-Nitrosodi-n-propylamine	621647	Calif. Toxics Rule	0.005	5	EPA 8270C
95	Nitrobenzene	98953	National Toxics Rule	17	10	EPA 8270C
53	Pentachlorophenol	87865	Calif. Toxics Rule	0.28	0.2	EPA 8270C
99	Phenanthrene	85018	No Criteria Available		5	EPA 8270C
54	Phenol	108952	Taste and Odor	5	1	EPA 8270C
100	Pyrene	129000	Calif. Toxics Rule	960	10	EPA 8270C

INORGANICS						
	Aluminum	7429905	Ambient Water Quality	87	50	EPA 6020/200.8
1	Antimony	7440360	Primary MCL	6	5	EPA 6020/200.8
2	Arsenic	7440382	Ambient Water Quality	0.018	0.01	EPA 1632
15	Asbestos	1332214	National Toxics Rule/ Primary MCL	7 MFL	0.2 MFL >10um	EPA/600/R-93/116(PCM)
	Barium	7440393	Basin Plan Objective	100	100	EPA 6020/200.8
3	Beryllium	7440417	Primary MCL	4	1	EPA 6020/200.8
4	Cadmium	7440439	Public Health Goal	0.07	0.25	EPA 1638/200.8
5a	Chromium (total)	7440473	Primary MCL	50	2	EPA 6020/200.8
5b	Chromium (VI)	18540299	Public Health Goal	0.2	0.5	EPA 7199/ 1636
6	Copper	7440508	National Toxics Rule	4.1 (2)	0.5	EPA 6020/200.8
14	Cyanide	57125	National Toxics Rule	5.2	5	EPA 9012A
	Fluoride	7782414	Public Health Goal	1000	0.1	EPA 300
	Iron	7439896	Secondary MCL	300	100	EPA 6020/200.8
7	Lead	7439921	Calif. Toxics Rule	0.92 (2)	0.5	EPA 1638
8	Mercury	7439976	TMDL Development		0.0002 (11)	EPA 1669/1631
	Manganese	7439965	Secondary MCL/ Basin Plan Objective	50	20	EPA 6020/200.8
9	Nickel	7440020	Calif. Toxics Rule	24 (2)	5	EPA 6020/200.8
10	Selenium	7782492	Calif. Toxics Rule	5 (8)	5	EPA 6020/200.8
11	Silver	7440224	Calif. Toxics Rule	0.71 (2)	1	EPA 6020/200.8
12	Thallium	7440280	National Toxics Rule	1.7	1	EPA 6020/200.8
	Tributyltin	688733	Ambient Water Quality	0.063	0.002	EV-024/025
13	Zinc	7440666	Calif. Toxics Rule/ Basin Plan Objective	54/ 16 (2)	10	EPA 6020/200.8
PESTICIDES - PCBs						
110	4,4'-DDD	72548	Calif. Toxics Rule	0.00083	0.02	EPA 8081A
109	4,4'-DDE	72559	Calif. Toxics Rule	0.00059	0.01	EPA 8081A
108	4,4'-DDT	50293	Calif. Toxics Rule	0.00059	0.01	EPA 8081A
112	alpha-Endosulfan	959988	National Toxics Rule	0.056 (9)	0.02	EPA 8081A
103	alpha-Hexachlorocyclohexane (BHC)	319846	Calif. Toxics Rule	0.0039	0.01	EPA 8081A
	Alachlor	15972608	Primary MCL	2	1	EPA 8081A
102	Aldrin	309002	Calif. Toxics Rule	0.00013	0.005	EPA 8081A
113	beta-Endosulfan	33213659	Calif. Toxics Rule	0.056 (9)	0.01	EPA 8081A
104	beta-Hexachlorocyclohexane	319857	Calif. Toxics Rule	0.014	0.005	EPA 8081A
107	Chlordane	57749	Calif. Toxics Rule	0.00057	0.1	EPA 8081A
106	delta-Hexachlorocyclohexane	319868	No Criteria Available		0.005	EPA 8081A
111	Dieldrin	60571	Calif. Toxics Rule	0.00014	0.01	EPA 8081A
114	Endosulfan sulfate	1031078	Ambient Water Quality	0.056	0.05	EPA 8081A
115	Endrin	72208	Calif. Toxics Rule	0.036	0.01	EPA 8081A
116	Endrin Aldehyde	7421934	Calif. Toxics Rule	0.76	0.01	EPA 8081A
117	Heptachlor	76448	Calif. Toxics Rule	0.00021	0.01	EPA 8081A
118	Heptachlor Epoxide	1024573	Calif. Toxics Rule	0.0001	0.01	EPA 8081A
105	Lindane (gamma-Hexachlorocyclohexane)	58899	Calif. Toxics Rule	0.019	0.019	EPA 8081A
119	PCB-1016	12674112	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082
120	PCB-1221	11104282	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082

121	PCB-1232	11141165	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082
122	PCB-1242	53469219	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082
123	PCB-1248	12672296	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082
124	PCB-1254	11097691	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082
125	PCB-1260	11096825	Calif. Toxics Rule	0.00017 (10)	0.5	EPA 8082
126	Toxaphene	8001352	Calif. Toxics Rule	0.0002	0.5	EPA 8081A
	Atrazine	1912249	Public Health Goal	0.15	1	EPA 8141A
	Bentazon	25057890	Primary MCL	18	2	EPA 643/ 515.2
	Carbofuran	1563662	CDFG Hazard Assess.	0.5	5	EPA 8318
	2,4-D	94757	Primary MCL	70	10	EPA 8151A
	Dalapon	75990	Ambient Water Quality	110	10	EPA 8151A
	1,2-Dibromo-3-chloropropane (DBCP)	96128	Public Health Goal	0.0017	0.01	EPA 8260B
	Di(2-ethylhexyl)adipate	103231	USEPA IRIS	30	5	EPA 8270C
	Dinoseb	88857	Primary MCL	7	2	EPA 8151A
	Diquat	85007	Ambient Water Quality	0.5	4	EPA 8340/ 549.1/HPLC
	Endothal	145733	Primary MCL	100	45	EPA 548.1
	Ethylene Dibromide	106934	OEHHA Cancer Risk	0.0097	0.02	EPA 8260B/ 504
	Glyphosate	1071836	Primary MCL	700	25	HPLC/ EPA 547
	Methoxychlor	72435	Public Health Goal	30	10	EPA 8081A
	Molinate (Ordram)	2212671	CDFG Hazard Assess.	13	2	EPA 634
	Oxamyl	23135220	Public Health Goal	50	20	EPA 8318/ 632
	Picloram	1918021	Primary MCL	500	1	EPA 8151A
	Simazine (Princep)	122349	USEPA IRIS	3.4	1	EPA 8141A
	Thiobencarb	28249776	Basin Plan Objective/ Secondary MCL	1	1	HPLC/ EPA 639
16	2,3,7,8-TCDD (Dioxin)	1746016	Calif. Toxics Rule	1.30E-08	5.00E-06	EPA 8290 (HRGC) MS
	2,4,5-TP (Silvex)	93765	Ambient Water Quality	10	1	EPA 8151A
	Diazinon	333415	CDFG Hazard Assess.	0.05	0.25	EPA 8141A/ GCMS
	Chlorpyrifos	2921882	CDFG Hazard Assess.	0.014	1	EPA 8141A/ GCMS

OTHER CONSTITUENTS					
Ammonia (as N)	7664417	Ambient Water Quality	1500 (4)		EPA 350.1
Chloride	16887006	Agricultural Use	106,000		EPA 300.0
Flow			1 CFS		
Hardness (as CaCO ₃)			5000		EPA 130.2
Foaming Agents (MBAS)		Secondary MCL	500		SM5540C
Nitrate (as N)	14797558	Primary MCL	10,000	2,000	EPA 300.0
Nitrite (as N)	14797650	Primary MCL	1000	400	EPA 300.0
pH		Basin Plan Objective	6.5-8.5	0.1	EPA 150.1
Phosphorus, Total (as P)	7723140	USEPA IRIS	0.14		EPA 365.3
Specific conductance (EC)		Agricultural Use	700 umhos/cm		EPA 120.1
Sulfate		Secondary MCL	250,000	500	EPA 300.0
Sulfide (as S)		Taste and Odor	0.029		EPA 376.2
Sulfite (as SO ₃)		No Criteria Available			SM4500-SO3
Temperature		Basin Plan Objective	°F		
Total Dissolved Solids (TDS)		Agricultural Use	450,000		EPA 160.1

FOOTNOTES:

(1) - The Criterion Concentrations serve only as a point of reference for the selection of the appropriate analytical method. They do not indicate a regulatory decision that the cited concentration is either necessary or sufficient for full protection of beneficial uses. Available technology may require that effluent limits be set lower than these values.

(2) - Freshwater aquatic life criteria for metals are expressed as a function of total hardness (mg/L) in the water body. Values displayed correspond to a total hardness of 40 mg/L.

(3) - For haloethers

(4) - Freshwater aquatic life criteria for ammonia are expressed as a function of pH and temperature of the water body. Values displayed correspond to pH 8.0 and temperature of 22 C.

(5) - For nitrophenols.

(6) - For chlorinated naphthalenes.

(7) - For phthalate esters.

(8) - Basin Plan objective = 2 ug/L for Salt Slough and specific constructed channels in the Grassland watershed.

(9) - Criteria for sum of alpha- and beta- forms.

(10) - Criteria for sum of all PCBs.

(11) - Mercury monitoring shall utilize "ultra-clean" sampling and analytical methods. These methods include:
Method 1669: Sampling Ambient Water for Trace Metals at EPA Water Quality Criteria Levels, US EPA; and
Method 1631: Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Atomic Fluorescence, US EPA

Dioxin and Furan Sampling

Each sample shall be analyzed for the seventeen congeners listed in the table below. High Resolution GCMS Method 8290, or another method capable of individually quantifying the congeners to an equivalent detection level, shall be used for the analyses.

For each sample the discharger shall report:

- The measured or estimated concentration of each of the seventeen congeners
- The quantifiable limit of the test (as determined by procedures in Section 2.4.3, No. 5 of the SIP)
- The Method Detection Level (MDL) for the test

The TCDD equivalent concentration for each analysis calculated by multiplying the concentration of each congener by the Toxicity Equivalency Factor (TEF) in the following table, and summing the resultant products to determine the equivalent toxicity of the sample expressed as 2,3,7,8-TCDD.

Congener	TEF
2,3,7,8-TetraCDD	1
1,2,3,7,8-PentaCDD	1.0
1,2,3,4,7,8-HexaCDD	0.1
1,2,3,6,7,8-HexaCDD	0.1
1,2,3,7,8,9-HexaCDD	0.1
1,2,3,4,6,7,8-HeptaCDD	0.01
OctaCDD	0.0001
2,3,7,8-TetraCDF	0.1
1,2,3,7,8-PentaCDF	0.05
2,3,4,7,8-PentaCDF	0.5
1,2,3,4,7,8-HexaCDF	0.1
1,2,3,6,7,8-HexaCDF	0.1
1,2,3,7,8,9-HexaCDF	0.1
2,3,4,6,7,8-HexaCDF	0.1
1,2,3,4,6,7,8-HeptaCDF	0.01
1,2,3,4,7,8,9-HeptaCDF	0.01
OctaCDF	0.0001

ATTACHMENT – I

Water Conservation Program

STATE WATER RESOURCES CONTROL BOARD (SWRCB)
DIVISION OF FINANCIAL ASSISTANCE (DIVISION)
May 2008
REVIEW PROCEDURES

Section IX(C) of *Policy for Implementing the State Revolving Fund for Construction of Wastewater Treatment Facilities* (Policy) requires applicants to have an approved Water Conservation Program (Program), unless a waiver is received, before the SWRCB issues a preliminary funding commitment. The Program must cover at least 75 percent of the water connections within the service area, must be consistent with local ordinances and authorities, and must be approved by the Division. The applicant may become a signatory to the *Memorandum of Understanding Regarding Urban Water Conservation in California* (MOU) instead of adopting an independent Program. If the applicant is not the water purveyor for the service area, then the applicant must certify that the water purveyor(s) either has an approved water conservation program or is a signatory to the MOU.

The easiest and best way to implement the Water Conservation Program is to become a signatory to and follow the Best Management Practices (BMPs) listed in the MOU. If signing on the MOU is not feasible, applicants and water purveyors may adopt their own water conservation programs that are specific to their individual water needs. In this situation, a water conservation program must be submitted to the Division for review to determine compliance with the Division's water conservation criteria.

Programs submitted for review should include discussions of the following areas:

- Water Supply and Area Characteristics
- Current Water Conservation Program
- Evaluation of Alternative Measures
- Recommended Water Conservation Program
- Water Shortage Plan

WATER SUPPLY AND AREA CHARACTERISTICS

Water supply and area characteristics should include an estimate of past, current, and projected potable and reclaimed water use. Relate these estimates to demographic users (residential, industrial, irrigation, and landscape) with the estimated percentage of water consumption per user type. The current status of groundwater, surface water, reclaimed water, and purchased water with respect to over all supply, demand, and quality should also be considered. A quantified analysis of the cost per unit volume must be evaluated so that water consumption savings with respect to water conservation mechanisms versus cost savings with respect to production and distribution of potable water can be compared.

CURRENT WATER CONSERVATION PROGRAM

A comprehensive review of the current Water Conservation Program with a description of the various water conservation measures must be included. This review should consist of an explanation of the BMPs used by the applicant, an estimated overall amount of water conserved by the BMP, and an estimated implementation cost of each BMP.

EVALUATION OF ALTERNATIVE MEASURES

An evaluation of alternative measures should consider no less than all BMPs specified in the MOU. An analysis of the applicability, cost effectiveness, potential water savings, public acceptance, non-quantifiable benefits, and ability to implement should be performed on each BMP. Each BMP should be analyzed individually and should contain the most optimum level of implementation with respect to different types of water users (i.e. if it is not effective to provide low flush toilets to all water consumers, would it be effective to replace toilets of the top 10 percent of residential water users?)

If any of the BMPs are determined to not be applicable or implementable, a discussion and justification must be given so that these measures may be waived. An example of justification for waiving BMP #9 would be that commercial and industrial water users do not exist within the water purveyor's distribution area.

The 14 BMPs discussed in the MOU are listed below:

1. Water Survey Programs For Single-Family Residential And Multi-Family Residential Customers
2. Residential Plumbing Retrofit
3. System Water Audits, Leak Detection And Repair
4. Metering With Commodity Rates For All New Connections And Retrofit Of Existing Connections
5. Large Landscape Conservation Programs And Incentives
6. High-Efficiency Clothes Washing Machine Financial Incentive Programs
7. Public Information Programs
8. School Education Programs
9. Conservation Programs For Commercial, Industrial, And Institutional Accounts
10. Wholesale Agency Assistance Programs
11. Retail Conservation Pricing
12. Conservation Coordinator
13. Water Waste Prohibition
14. Residential Ultra-Low Flush Toilet Replacement Programs

A full description of the elements of the BMPs contained in the MOU is available at the California Urban Water Conservation Council: <http://www.cuwcc.com>.

RECOMMENDED WATER CONSERVATION PROGRAM

The Recommended Water Conservation Program should consist of all BMPs found to be effective after the evaluation process is done. The Program should clearly identify the resources and time required to implement each of the effective BMPs.

WATER SHORTAGE PLAN

Provide an urban water shortage contingency analysis which includes each of the following elements which are within the authority of the urban water supplier:

1. Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50 percent reduction in water supply, and an outline of specific water supply conditions which are applicable to each stage.
2. An estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply.

3. Actions to be undertaken by the urban water supplier to prepare for, and implement during a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.
4. Additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.
5. Consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use reduction consistent with up to a 50 percent reduction in water supply.
6. Penalties or charges for excessive use, where applicable.
7. An analysis of the impacts of each of the actions and conditions described in (a) to (f) above, inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.
8. A draft water shortage contingency resolution or ordinance.
9. A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.

OTHER STATE LAW

The Urban Water Management Planning Law, Water Code, Part 2.6, Section 10610 et.seq., requires every urban water supplier to prepare and adopt an Urban Water Management Plan that includes specific elements. Water urban suppliers, either publicly or privately owned, providing water for municipal purpose either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually are subject to this Law. Agencies may submit an Urban Water Management Plan instead of a Water Conservation Program in meeting the water conservation requirement (Section 10653 of the Water Code).